



Number-Crunching Taming Unruly Computational Problems from Mathematical Physics to Science Fiction

By Paul J. Nahin

Princeton University Press. Hardcover. Book Condition: New. Hardcover. 408 pages. Dimensions: 9.2in. x 6.1in. x 1.3in. How do technicians repair broken communications cables at the bottom of the ocean without actually seeing them? What's the likelihood of plucking a needle out of a haystack the size of the Earth? And is it possible to use computers to create a universal library of everything ever written or every photo ever taken? These are just some of the intriguing questions that best-selling popular math writer Paul Nahin tackles in *Number-Crunching*. Through brilliant math ideas and entertaining stories, Nahin demonstrates how odd and unusual math problems can be solved by bringing together basic physics ideas and today's powerful computers. Some of the outcomes discussed are so counterintuitive they will leave readers astonished. Nahin looks at how the art of number-crunching has changed since the advent of computers, and how high-speed technology helps to solve fascinating conundrums such as the three-body, Monte Carlo, leapfrog, and gamblers ruin problems. Along the way, Nahin traverses topics that include algebra, trigonometry, geometry, calculus, number theory, differential equations, Fourier series, electronics, and computers in science fiction. He gives historical background for the problems presented, offers many examples and numerous...



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